Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (withdrawn): A system of pumps, lines, and valves that circulate fluid outside a patient's body during a surgery, comprising:

a pump which draws fluid from the patient using suction;

a valve disposed in a first line connecting the pump and the patient, the first line having a first end being disposed inside the patient and a second end connected to the pump;

wherein when the first line experiences a predetermined amount of negative pressure, the valve allows fluid to flow from a source other than the patient toward the pump without introducing air into the first line.

Claim 2 (withdrawn): The system of Claim 1, wherein the valve allows fluid to flow from a source other than the patient toward the pump via a second line connecting to the first line at the valve.

Claim 3 (withdrawn): The system of Claim 1, wherein the valve presents a visual indicator when it allows fluid to flow from a source other than the patient into the first line.

Claim 4 (withdrawn): The system of Claim 1, wherein the valve relieves positive pressure in the first line.

Claim 5 (withdrawn): The system of Claim 1, wherein the valve prevents flow from the pump to the patient.

Claim 6 (withdrawn): The system of Claim 1, wherein the predetermined level is adjustable.

Claim 7 (currently amended): A valve for controlling the pressure of fluid in a line of an extracorporeal circuit during heart surgery, comprising:

a first inlet having an axis parallel to the direction of fluid flow through the first inlet, the first inlet comprising a first coupling means for coupling the first inlet to a patient;

a second inlet having an axis parallel to the direction of fluid flow through the second inlet, the second inlet comprising a second coupling means for coupling the second inlet to a source;

an outlet having an axis parallel to the direction of fluid flow through the outlet, the outlet comprising a third coupling means for coupling the outlet to a pump;

wherein the first inlet includes a one-way flow control device ~~valve~~ which allows fluid suctioned from a patient's body to pass into the valve toward the outlet, but does not allow fluid flow in the reverse direction;

wherein the second inlet includes a two-way flow control device ~~valve~~ which allows fluid to pass from the source ~~a source~~ into the valve to prevent the entry of air into the line ~~toward the outlet~~ when ~~negative~~ pressure in the line reaches a predetermined level of negative pressure; and

wherein the axis of the first inlet and the axis of the second inlet have an angle between them of less than ninety degrees.

Claim 8 (cancelled).

Claim 9 (currently amended): The valve of Claim 7 further comprising:~~, wherein the valve further comprises a visual indicator of fluid flow within the valve.~~

a visual indicator of fluid flow.

Claim 10 (currently amended): The valve of Claim 7, wherein the two-way flow control device ~~valve~~ in the second inlet allows fluid to pass from the line to the source when ~~positive~~ pressure in the line reaches a predetermined level of positive pressure.

Claim 11 (currently amended): The valve of Claim 10, wherein the two-way flow control device ~~valve~~ may be adjusted to modify the predetermined level of positive pressure.

Claim 12 (withdrawn): An extracorporeal circuit, comprising:

a pump in fluid communication with a first line, the first line being positioned to draw fluid from a patient;

a valve system in the first line between the pump and the patient, the valve system having a first valve which prevents flow of fluid from the pump toward the patient and a second valve which allows fluid to pass through the second valve toward the pump when negative pressure in the first line exceeds a predetermined amount;

wherein the valve system provides for relief of excess positive pressure in the first line; and

wherein the valve system relieves negative pressure by allowing fluid flow from the first source to the first line.

Claim 13 (withdrawn): The circuit of Claim 12, wherein the valve system relieves negative pressure in the first line without introducing air into the circuit.

Claim 14 (withdrawn): The circuit of Claim 12, wherein the valve system presents a visual indicator when it allows fluid to flow from a source other than the patient into the first line.

Claim 15 (withdrawn): The circuit or Claim 12, wherein the valve system relieves positive pressure by allowing fluid flow from the first line toward a first source.

Claim 16 (withdrawn): The circuit of Claim 12, wherein the predetermined amount is adjustable.

Claim 17 (withdrawn): The circuit of Claim 12, wherein no valve in the circuit introduces air into the circuit.

Claim 18 (currently amended): The valve of Claim 9, wherein the visual indicator is a transparent surface on the body of the valve ~~window~~ wherein fluid flow within the valve can be observed.

Claim 19 (previously presented): The valve of claim 9, wherein the visual indicator is a mechanical device which activates to indicate the flow of fluid within the valve.

Claim 20 (previously presented): The valve of claim 9 further comprises an electronic detector for measuring fluid flow within the valve; and wherein the visual indicator is connected to the electronic detector.

Claim 21 (previously presented): The valve of claim 20 wherein the visual indicator is an electronic display.

Claim 22 (currently amended): The valve of claim 7 wherein the valve further comprises an expelling outlet wherein the expelling outlet permits fluid flow to open air in the event that ~~positive~~ pressure in the line reaches a predetermined level of positive pressure.

Claim 23 (currently amended): The valve of claim 7 wherein the two-way flow control device ~~valve~~ may be adjusted to modify the predetermined level of negative pressure.

Claim 24 (previously presented): The valve of claim 7 wherein the source is a venous reservoir.

Claim 25 (previously presented): The valve of claim 7 wherein the source is a reservoir that is open to the atmosphere.

Claim 26 (currently amended): The valve of claim 7 wherein the one-way flow control device ~~valve~~ in the first inlet is a duck-billed valve.

Claim 27 (withdrawn): The method of controlling pressure of a fluid in a valve in a line of an extracorporeal circuit during heart surgery, comprising the steps of:

permitting fluid flow from a patient's body into a first inlet of the valve;

restricting fluid flow such that the fluid may not flow in a reverse direction out of the first inlet of the valve;

allowing fluid flow from a source into the valve through a second inlet if a negative pressure in the line reaches a predetermined level of negative pressure; and

providing unrestricted fluid flow through an outlet of the valve.

Claim 28 (withdrawn): The method of claim 27 further comprising the step of indicating a direction of fluid flow within the valve.

Claim 29 (withdrawn): The method of claim 27 further comprising the step of adjusting the predetermined level of negative pressure.

Claim 30 (withdrawn): The method of claim 27 further comprising the step of allowing fluid flow from the valve into a source through the second inlet if a positive pressure in the line reaches a predetermined level of positive pressure.

Claim 31 (withdrawn): The method of claim 30 further comprising the step of adjusting the predetermined level of positive pressure.